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Titolo	Critical Earthquake Response of Elastic-Plastic Structures and Rigid Blocks under Near-Fault Ground Motions: Closed-Form Approach via Double Impulse
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Sommario/riassunto	<p>This eBook is the second in a series of books on the critical earthquake response of elastic-plastic structures or rigid blocks under near-fault ground motions, and includes four original research papers which were published in the specialty section Earthquake Engineering in 'Frontiers in Built Environment'. Several extensions of the first book¹ are included here. The first article is on the soil-structure interaction problem. The reduction of an original soil-structure interaction model into a single-degree-of-freedom (SDOF) model enables the application of the original theory for an SDOF model to such complicated soil-structure interaction model. The second article is concerned with the extension of the original theory for an SDOF model to a 2DOF model. Since the simple application of the original theory for an SDOF model to a multi-degree-of-freedom model is difficult due to out-of-phase phenomenon of multiple masses, a convex model theory is introduced and an upper bound of elastic-plastic response is derived. The third article is related to the stability problem of structures (collapse problems of structures) in which the P-delta effect is included. It is shown that the original theory for an SDOF model with elastic-perfectly plastic restoring-force characteristic can be applied to a model with negative second slope. The fourth article is an application of the energy balance approach to an overturning limit problem of rigid blocks. A closed-form expression of the overturning limit of rigid blocks is</p>

derived for the first time after the Housner's pioneering work in 1963. The approach presented in this book, together with the first book, is an epoch-making accomplishment to open the door for simpler and deeper understanding of structural reliability of built environments in the elastic-plastic and nonlinear range.
